

DERWENT-ACC-NO: 1994-283361

DERWENT-WEEK: 199435

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TITLE: Sulphated chitosan prodn., useful as anticoagulant polysaccharide, aggregating agent, etc. - comprises neutralising acidic soln. of chitosan then reacting with sulphur tri:oxide/tri:alkylamine complex

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PRIORITY-DATA: 1993JP-0006465 (January 19, 1993)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 06211903 A	August 2, 1994	N/A	005	C08B 037/08

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
JP 06211903A	N/A	1993JP-0006465	January 19, 1993

INT-CL (IPC): C08B037/08

ABSTRACTED-PUB-NO: JP 06211903A

BASIC-ABSTRACT:

Producing sulphated chitosan comprises (1) neutralising acid soln. of chitosan; and (2) reacting regenerated chitosan with SO<sub>3</sub>-trialkylamine complex in polar solvent which does not decompose but solubilises SO<sub>3</sub>-trialkylamine complex, so that hydroxy gp. at C3 and C6 position may be selectively sulphated.

Also claimed is an agent for sulphating chitosan comprising SO<sub>3</sub>-trialkylamine complex.

Pref., polar solvent are at least one of dimethylpholmamide, dimethylacetamide, and dimethylsulphoxide. Preferred washing process further comprises washing the regenerated chitosan with hydrophilic organic solvent such as alcohols,

ketones, and furans.

Examples of acid for pretreatment are HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, CH<sub>3</sub>COOH, etc., and the conc. is 0.5 to 2 wt.%. Examples of alkali are NaOH, Na<sub>2</sub>CO<sub>3</sub>, KOH, etc., and the concn. is 5 to 20 wt.%.

USE/ADVANTAGE - Sulphated chitosan is useful as anticoagulant polysaccharide, aggregating agent, sepg. agent, immunological substance carrier, water-soluble drug carrier, etc., and is applicable for pharmaceutical and cosmetic use. Sulphated chitosan of high purity and viscosity can be easily produced at lower cost, compared to conventional method which requires crystallisation and purificn. for sepg. objective substance from by-product of sulphates (H.L. Wolfrom et al., J.Am.Chem.Soc., 81,1764(1959).

In an example, chitosan (10g) was dissolved in 2% acetic acid soln. (1000g), added with 10% NaOH with stirring for neutral pptn., washed with water, methane, and DMF, and soaked in DMF (150g). The pretreated chitosan was stirred with SO<sub>3</sub>-trimethylamine complex (34g) in DMF soln. at 75 deg.C for 5 hrs., filtered, washed with DMF, dissolved in water, and added with 10% NaOH soln. for neutralisation to obtain sulphated chitosan (13.8g). Sulphation degree was 0.81. Viscosity of 0.5% soln. was 35000 centipoise.

CHOSEN-DRAWING: Dwg.0/2

DERWENT-CLASS: A96 B04 B07 D21

CPI-CODES: A10-E09; A10-E24; A12-V01; A12-V04; B04-C02E3; B14-F04;  
B14-R01;  
D08-B;